VERMONT AGENCY OF NATURAL RESOURCES
APPLICATION FOR COVERAGE UNDER THE STREAM ALTERATION GENERAL PERMIT FOR REPORTING ACTIVITY (SECTION C.2.2)

10 VSA, SECTIONS 1022 & 7503

Agency Use Only
Project ID _____
Receipt Date _____

Applicant Name South Village Communities, LLC
South Village Communities Association, LLC
Mailing Address C/o SD Ireland , Attn: Robin Jeffers, PO Box 2286
South Burlington, Vermont 05407-2286

Phone (802) 863-2946 Cell (802) 316-6004 Email robin@SDIRELAND.COM

RECEIVED OCT 19 2015 WSMD

Landowner (if different than applicant) _____

Landowner Mailing Address Same as Applicant Phone _____

_____ Email _____

Project Location: Address 76 East Jefferson Road Town S. Burl. Lat/Long: 44.41737, 73.19196

River Unnamed Trib of Monroe Brook Drainage Area 0.52 Sq. Mi.

Brief Project Description Construction of 30' clear span 3-sided box culvert for new municipal road.

_____

Consultant or Designer (if known) Civil Engineering Assoc., Inc. Phone 864-2323 Email dmarshall@cea-vt.com

Contractor (if known) S.D. Ireland Phone 863-2946 Email robin@sdireland.com

Required Attachments (additional information may be required after initial application review)

- ☐ Location Map
- ☐ List of adjoining landowners; names and addresses
- ☐ Project design drawings (2 copies if submitted as hard copy) including: plan view, cross sections, existing & proposed conditions, bankfull width (channel width at high water)

****APPLICANT MUST FILE COPY OF THIS APPLICATION WITH TOWN CLERK AND ADJOINERS****

CERTIFICATION: I hereby certify that the information on this application is, to the best of my knowledge, true and accurate and that I have provided a copy of this application to the Clerk of the municipality in which this activity is located, the local and regional planning commissions, and to each adjoining landowner as required in the Vermont Stream Alteration Rule. **I recognize that by signing this application I am giving consent to employees of the State to enter the subject property for the purpose of processing this application and for ensuring compliance with subsequent agency decisions relating to the project.**

Print Full Name Robin Jeffers

Applicant Signature Robin Jeffers Date 10-13-15

NOTE: A PERMIT MAY BE REQUIRED FROM THE US ARMY CORPS OF ENGINEERS. For information contact: USA Corps of Engineers, VT Project Office, 8 Carmichael Street Suite 205, Essex Jct VT 05452 802-872-2893

ENCLOSE $200.00 APPLICATION FEE PAYABLE BY CHECK OR MONEY ORDER TO THE "STATE OF VERMONT"

South Village Comunities, LLC
Stream Alteration Permit (Bridge Construction)

List of Abutters

Designation	Street Address	Owner	Mailing Address			
1	1975 SPEAR ST	SYLVESTER DIANE	1985 SPEAR STREET	S BURLINGTON	VT	05403
2	1985 SPEAR ST	SYLVESTER ALAN F & DIANE H	1985 SPEAR ST	S BURLINGTON	VT	05403
3	1975 SPEAR ST	SYLVESTER DIANE	1985 SPEAR STREET	S BURLINGTON	VT	05403
4	1971 SPEAR ST	VALLEE RODOLPHE M	282 SOUTH MAIN STREET	ST ALBANS	VT	05478
4	2004 SPEAR ST	VALLEE RODOLPHE & DENISE	1190 SPEAR ST	SHELBURNE	VT	05482
5	2004 SPEAR ST	VALLEE RODOLPHE & DENISE	1190 SPEAR ST	SHELBURNE	VT	05482
6	Assoc Open Space	DORSET FARMS HOMEOWNERS ASSOCIATION, INC.	92 BUTLER DR	S BURLINGTON	VT	05403
6a	192 CATKIN DR	O'BRIEN MAUREEN	192 CATKIN DR	S BURLINGTON	VT	05403
6b	197 CATKIN DR	BLISS SUSAN C	197 CATKIN DR	S BURLINGTON	VT	05403
6c	37 FLORAL DR	ISUFI MERGIM	37 FLORAL ST	S BURLINGTON	VT	05403
6d	35 FLORAL DR	TERHUNE BRIAN A	35 FLORAL ST	S BURLINGTON	VT	05403
6e	33 FLORAL DR	PALLUTTO STANLEY J & CAROLYN R	33 FLORAL ST	S BURLINGTON	VT	05403
6f	31 FLORAL DR	BOUVIER MICHAEL R	31 FLORAL DR	S BURLINGTON	VT	05403
7	Assoc Open Space	DORSET FARMS HOMEOWNERS ASSOCIATION, INC.	92 BUTLER DR	S BURLINGTON	VT	05403
8	1675 DORSET ST	LANG WILLIAM R & GAIL S	1675 DORSET ST	S BURLINGTON	VT	05403
9	1575 DORSET ST	HYMAN NOAH E	1575 DORSET ST	S BURLINGTON	VT	05403
10	1505 DORSET ST	DEMERS TRAMPAS	1505 DORSET ST	S BURLINGTON	VT	05403
11	1720 SPEAR ST	LONG CAROLYN E REVOCABLE TRUST	1720 SPEAR ST	S BURLINGTON	VT	05403
12	1730 SPEAR ST	LONG LITTLETON, EXEMPT FAMILY TRUST	1720 SPEAR ST	S BURLINGTON	VT	05403
13	1755 SPEAR ST	CONE DAVID O & CATHERINE L	166 APPLETREE POINT RD	BURLINGTON	VT	05401
14	1803 SPEAR ST	LAHUE KEVIN P & KRISTIN F	1803 SPEAR ST	S BURLINGTON	VT	05403
15	1807 SPEAR ST	FARINA JANET F	1807 SPEAR ST	S BURLINGTON	VT	05403
16	1809 SPEAR ST	PAPPAS MARY X	PO BOX 5735	BURLINGTON	VT	05402-5735
17	1811 SPEAR ST	CUMMINGS DONALD R	1811 SPEAR ST	S BURLINGTON	VT	05403
18	1813 SPEAR ST	FUSUN T FLOYD TRUST	1813 SPEAR ST	S BURLINGTON	VT	05403
19	1815 SPEAR ST	MITAL BRIAN J	1815 SPEAR ST	S BURLINGTON	VT	05403
20	1827 SPEAR ST	1827 SPEAR STREET LLC	410 SHELBURNE RD	S BURLINGTON	VT	05403
21	20 ALLEN RD E	SOUTH VILLAGE COMMUNITIES, LLC	PO BOX 2286	S BURLINGTON	VT	05403
22	60 ALLEN RD E	SOUTH VILLAGE COMMUNITIES, LLC	PO BOX 2286	S BURLINGTON	VT	05403

CIVIL ENGINEERING ASSOCIATES, INC.
10 Mansfield View Lane
South Burlington, VT 05403
Phone: 802-864-2323
Fax: 802-864-2271
E-Mail: mail@cea-vt.com

October 11, 2015

Mr. Christopher Brunelle
River Management Engineer
Vermont DEC Watershed Management Division
Rivers Program
1 National Life Drive, Main 2
Montpelier VT 05620-3522

Local Address:
Vermont DEC Watershed Management Division
111 West St
Essex Junction, Vermont 05452

Re: South Village Phase III Bridge, South Burlington, VT
NOI and Application for Coverage

Dear Chris,

South Village Communities, Inc. is proposing the construction of the first 500 feet of East Jefferson Avenue and parallel recreation path beginning at the intersection with South Jefferson Ave and proceeding easterly across the unnamed tributary of Monroe Brook to a termination point approximately 150 feet east of the crossing. This project includes the construction of a new bridge structure across the unnamed tributary.

The applicant is proposing the use of precast concrete footings and 30-foot clear span 3-sided box culvert as part of the plan to minimize the construction time for the bridge structure. The existing stream is not well defined in this area but further downstream it evolves into a 6-foot wide channel.

The applicant is proposing to construct this during frozen conditions as a means of minimizing erosion potential associated with severe storm events. The project is anticipated to start construction in the mid-winter.

In support of this effort, please find enclosed a Notice of Intent form, application fee, and electronic application package submitted on behalf of South Village Communities, LLC, for the proposed work within the stream banks of this undammed tributary.

Conservatively, this project requires the submittal of an application as the work is proposed to be undertaken outside of the July 1 to October 1 period. In support of the demonstration of compliance with the standards set forth in the General Permit, we have inserted below the relevant text from the GP and have embedded our comments in **bold font**.

C.2.2.4. Construction of new bridges or replacement of existing bridges (includes any open bottom structure such as an arch or three sided box **A 3-sided box on precast footings is proposed**) that are in compliance with the Stream Alteration Standards (Section B.3. **See narrative on page 4**) by meeting the following design requirements:

a) Structure meets the following span length and opening height dimensions:

i) Span Length

(1) Minimum span length = 1.0X the bank full width of the stream; or **The attached bank full stream width predictor (See Attachment 1), which is a conservative estimate as this watershed area is only 0.52 square miles is 21 feet. The proposed box culvert has a span of 30-feet.**

(2) Minimum span length > 1.2X the bank full width of the stream, as determined by the Secretary, in reaches having high risk of excessive erosion or deposition, based on stream process and geomorphic conditions, as specified in the most current updated version of the Vermont Standard River Management Principles and Practices; **As this reach is not currently prone to any erosion, this section is not applicable.**

ii) Opening Height

(1) Minimum opening height >4.0X the mean depth of the bank full channel and provides the hydraulic capacity to pass design flows, sediment, and debris, as specified in the most current updated version of the VTrans Hydraulics Manual; or **Due to previously agreed upon limits of the fill to be placed at this location as a means of minimizing wetland impacts, this standard is more appropriately covered in section (2) below.**

(2) Minimum opening height > 3.0X the mean depth of the bank full channel at sites where physical constraints preclude achievement of the 4.0X standard and any potential increase in flooding hazard associated with a reduced opening height will be offset by other factors such as a lower roadway fill height, as approved by the Secretary and as specified in the most current updated version of the VTrans Hydraulics Manual; **The attached bank full stream depth predictor, which is a conservative estimate as this watershed area is only 0.52 square miles, is 1.3 feet. The standard clearance height would conservatively be 1.3 x 3.0 = 3.9 feet. The proposed box culvert has a clear height of 4.2 feet.**

b) There is no channel or roadway realignment and any structure for traffic maintenance during construction used to span the stream channel has the span length no less than that of the existing structure or provides a span length of at least 1.0X bank full width; and **Not applicable as there is no existing structure nor proposed temporary bridge structure.**

c) Where required, a municipal zoning permit is obtained, prior to construction, if the proposed project is located in a flood hazard area as designated in the municipal flood hazard area ordinance or bylaw. **This project site is not located within e FEMMA designated floodway (See Attachment 2)**

The River Management Engineer, in coordination with the State Floodplain Manager's Office, will conduct the state compliance review of a bridge project subject to municipal flood hazard area ordinances or bylaws, in accordance 24 V.S.A. §4424(2)(D). **Acknowledged.**

A stream alteration permit issued by the River Management Engineer will serve as the agency's commentary that the project is consistent with National Flood Insurance Program (NFIP) requirements. **Acknowledged.**

B.3. Stream Alteration Standards

B.3.1. Statutory Standards (10 V.S.A. §1023(a)) – An authorization under this General Permit shall be granted for a stream alteration, subject to such conditions determined to be warranted by the Secretary, if it appears that the change:

1. Will not adversely affect the public safety by increasing flood or fluvial erosion hazard. **The project has been design o provide ample clear span width, and within the guidance for those projects with vertical alignment restrictions ample vertical clearance.**

2. Will not significantly damage fish life or wildlife; **The proposed alignment was chosen in consultation with DEC as a means of avoiding impacts at other previously proposed crossing locations of this unnamed tributary.**

3. Will not significantly damage the rights of riparian owners; and **The backwater effects are minimal and are all controlled within the applicant's property.**

4. In the case of any waters designated as outstanding resource waters under 10 V.S.A. §1424a, will not adversely affect the values sought to be protected by the designation. **Not applicable.**

B.3.2. Stream Alteration Performance Standards (§27-402(b), Vermont Stream Alteration Rule) – Public safety, aquatic life, and riparian property are at an increased risk of being adversely affected when stream alterations change the course, current, or cross-section of a stream in a manner that causes the stream to depart from, further depart from, or be impeded from attaining an equilibrium condition or that alters the connectivity of the stream in its vertical and horizontal dimensions.

In determining whether a proposed stream alteration seeking coverage under this General Permit meets the statutory criteria set forth in Section B.3.1. of this General Permit, the Secretary shall apply the following performance standards:

B.3.2.1. **Equilibrium Standard** - An activity shall not change the physical integrity of the stream in a manner that causes it to depart from, further depart from, or impedes the attainment of the channel width, depth, meander pattern, and slope associated with the stream processes and the equilibrium conditions of a given reach of stream.

The equilibrium standard is met when it can be shown that, following the stream alteration, the water flow, sediment, and woody debris produced by the watershed will be transported by the stream channel in such a manner that the stream maintains its dimension, general pattern, and slope with no unnatural aggrading (raising) or degrading (lowering) of the channel bed elevation along the longitudinal stream bed profile. **This standard has been accommodated in this design by providing a proposed clear span width greater than that outlined in the predicted Bankfull Channel Dimensions Table while complying with the standards set forth in Section C2.2.4 (a)(ii)(2)**

B.3.2.2. **Connectivity Standard-** An activity shall not change physical stream forms or alter local channel hydraulics, natural streambank stability, or floodplain connectivity in a manner such that changes in the erosion or deposition of instream materials results in localized, abrupt changes to or disconnects within the horizontal alignment of stream banks or vertical profile of the stream bed.

A person shall not, unless authorized by the Secretary, change the course, current, or cross-section of a watercourse so as to create a physical obstruction or velocity barrier to the movement of aquatic organisms or change the vertical stream bed profile in a manner that impedes the movement of aquatic organisms.

A person shall not establish, construct, or maintain a berm in a flood hazard area or river corridor, as defined in this General Permit, unless authorized as an emergency protective Measure as prescribed in Section E. of this General Permit.

This standard has been complied with through the design of the proposed structure which preserves the existing alignment and cross section of the stream.

Watershed Characteristics

Attachment 3 summarizes the characteristics of the watershed. It shows that for the 0.52 square mile watershed that the estimated Q100 flow is 94.9 CFS. Previously we had completed our own HydroCad based hydrologic modeling of the contributory area (Attachment 4). The watershed area matched exactly but we found that the Q100 value was 159.2 CFS (page 40). The resulting depth of the flow through the proposed structure was 1.94 feet in comparison to the flow through this conservatively modeled area (constant cross slope without 14' wide channelized portion) without the structure of 1.40 feet (Last Page of Attachment 4).

This completes our introduction and summary of the compliance features of this proposed bridge/stream crossing project. If you should have any questions, please feel free to contact me at 864-2323 x310 or at dmarshall@cea-vt.com.

Respectfully,

David S. Marshall, P.E.
Principal Engineer

Enclosures

- Application & Application Fee ($200)
- Abutters List and Reference Plans
- Attachment 1 – Vermont Bankfull Channel Dimension Table
- Attachment 2 – FEMA Floodway Mapping for Area
- Attachment 3 – USGS Watershed Area and Design Flows
- Attachment 4 – HydroCAD based Design Flows/Depths
- Attachment 5 – Design Plans

Cc: (all w encl. 11x17 plans) P. O'Brien; CEA File 01243.14; City Clerk